REMARKS

This Response is submitted in reply to the Office Action dated March 11, 2008, in which the Examiner:

rejected claims 1, 2, 7 and 11 under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,642,015 to Whitehead et al.;

rejected claims 8-13 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,642,015 to Whitehead et al; and

indicated that claims 3-6 would be allowable.

Applicants respectfully traverse the rejections below. Claims 1-13 were pending. Claims 14-18 have been added. Claims 1, 11 and 18 are independent claims.

Regarding the rejection of claims 1, 2, 7 and 11 under 35 U.S.C. §102(b) as anticipated by Whitehead, independent claim 1 recites a tactile sensor element comprising a first pressure transfer layer and a second pressure transfer layer, an elastomeric body arranged between the first and second pressure transfer layers, the body having a first surface and a second surface opposed to each other, the first and second surfaces having corrugations to allow displacement of elastomeric body material in a predetermined direction perpendicular to the corrugations when exposed to a contact pressure on at least one of the surfaces, and a first electrode arranged on the first surface and a second electrode arranged on the second surface, the first and the second electrodes being connectable to external means for determining the capacitance of a capacitor formed by the elastomeric body and the electrodes, wherein at least one pressure transfer layer has at least one portion of increased thickness. Independent claim 11 is directed to a tactile sensor array comprising, in part, a plurality of sensor elements, and includes similar recitations to those discussed in connection with claim 1.

An anticipation rejection under § 102 is improper unless a single prior art reference shows or discloses each and every claim recitation. Whitehead does not show or disclose each and every recitation of claim 1 or 11. Specifically, Whitehead does not show or disclose a tactile sensor element. Instead,

Whitehead discloses an electrostatic transducer configured as an actuator. (Whitehead, col. 3, lines 29-32). As recited in claims 1 and 11, the tactile sensor element of the present invention includes first and second electrodes being connectable to external means for determining the capacitance of a capacitor formed by the elastomeric body and the electrodes. The electrostatic transducer of Whitehead instead includes microelectrodes that are connected to a power supply for causing controlled, time-varying displacement of the microelectrodes. (Whitehead, Abstract).

Additionally, Whitehead does not show or disclose a first pressure transfer layer and a second pressure transfer layer. Microstructured substrate 12 of Whitehead, identified by the Examiner on page 2 of the Office Action, is not a pressure transfer layer. Rather, microstructured substrate 12 forms a space 20 defining interelectrode gap spacing 18 between microelectrodes 6 and 14, such that when actuated, the two sets of microelectrodes 6 and 14 move relative to one another and compress the gas in space 20. (Whitehead, col. 7, line 52 through col. 8, line 5).

Whitehead also does not show or disclose first and second surfaces having corrugations to allow displacement of elastomeric body material in a predetermined direction perpendicular to the corrugations when exposed to a contact pressure on at least one of the surfaces, as recited in claim 1. Instead, Whitehead only discloses that ridges 5 and microelectrodes 6 achieve harmonic motion. (Whitehead, Col. 4, lines 60-62). Thus, first, Whitehead does not disclose anything with regard to contact pressure on at least one of the surfaces. Also, Whitehead does not disclose anything with regard to displacement of material of its elastomeric body 4. Since Whitehead does not disclose displacement of the elastomeric body material, Whitehead also fails to disclose that such displacement is perpendicular to the corrugations.

Additionally, with regard to claim 11, Whitehead does not show or disclose a tactile sensor array comprising a plurality of sensor elements arranged in a row and column configuration. In fact, the Examiner states on page 3 of the Office Action that Whitehead does not disclose sensor elements arranged in a row and column configuration.

Since Whitehead does not show or disclose every element of independent claims 1 and 11, Whitehead does not anticipate claims 1 and 11.

Claims 2 and 7 depend from claim 1 and include additional recitations thereto. Therefore, claims 2 and 7 are not anticipated by Whitehead for at least the reasons stated above in connection with independent claim 1.

Accordingly, Applicants respectfully submit that the rejection of claims 1, 2, 7 and 11 under 35 U.S.C. § 102(b) is improper and should be withdrawn.

Regarding the rejection of claims 8-13 under 35 U.S.C. § 103(a) as unpatentable over Whitehead, a rejection under 35 U.S.C. § 103(a) is improper unless the Examiner establishes a *prima facie* case of obviousness. A *prima facie* case of obviousness is not established where the reference teachings, alone or in combination, do not teach or suggest each and every claim recitation.

Claims 8 and 11 are both directed to a tactile sensor array comprising a plurality of sensor elements and recite that the sensor elements are arranged in a row and column configuration for the determination of local pressure variations over the surface area of the sensor array, the plurality of sensor elements being integrally formed in a common elastomeric body member.

Whitehead does not teach or suggest the recitations of claims 8 and 11. First, Whitehead does not teach or suggest a tactile sensor element. Instead, Whitehead teaches an electrostatic transducer configured as an actuator. (Whitehead, col. 3, lines 29-32). As recited in claims 8 and 11, the tactile sensor element of the present invention includes first and second electrodes being connectable to external means for determining the capacitance of a capacitor formed by the elastomeric body and the electrodes. The electrostatic transducer of Whitehead instead teaches microelectrodes that are connected to a power supply for causing controlled, time-varying displacement of the microelectrodes. (Whitehead, Abstract).

Second, Whitehead does not teach or suggest a first pressure transfer layer and a second pressure transfer layer. Microstructured substrate 12 of Whitehead, identified by the Examiner on page 2 of the Office Action, does not teach a pressure transfer layer. Rather, microstructured substrate 12 teaches a space 20 defining interelectrode gap spacing 18 between microelectrodes 6 and 14, such

that when actuated, the two sets of microelectrodes 6 and 14 move relative to one another and compress the gas in space 20. (Whitehead, col. 7, line 52 through col. 8, line 5). If anything, Whitehead teaches away from a first pressure transfer layer and a second pressure transfer layer because if microstructured substrate 12 were a pressure transfer layer, interelectrode gap spacing 18 would be eliminated, making Whitehead's actuator unsuitable for its intended purpose.

Third, Whitehead does not teach or suggest first and second surfaces having corrugations to allow displacement of elastomeric body material in a predetermined direction perpendicular to the corrugations when exposed to a contact pressure on at least one of the surfaces. Instead, Whitehead teaches that ridges 5 and microelectrodes 6 achieve harmonic motion (Whitehead, Col. 4, lines 60-62), and that interelectrode gap spacing 18 creates a space 20 between the two substrates, in which the ridges 5 may harmonically move. (Whitehead, Col. 7, lines 52-59). Thus, Whitehead does not teach anything with regard to contact pressure on at least one of the surfaces. In fact, contact pressure on one of the surfaces of Whitehead's substrate 4 would make the device of Whitehead inoperable. Furthermore, Whitehead does not teach anything with regard to displacement of material of its elastomeric body 4 and, therefore, also does not teach that such displacement is perpendicular to the corrugations.

Fourth, Whitehead does not teach or suggest a tactile sensor array comprising a plurality of sensor elements. Rather, Whitehead teaches the use of a mold to microreplicate structured elastomer films to reduce the cost of production compared to conventional machining. (Whitehead, col. 3, lines 44-53). Replicating elastomer films through the use of a mold does not teach a tactile sensor array comprising a plurality of sensor elements, as erroneously stated by the Examiner on page 4 of the Office Action. An elastomeric body is only one component of a sensor element. Thus, teaching the manufacture of an elastomeric body, a single component of a sensor element, cannot possibly teach an array of fully assembled sensor elements as recited in claims 8-13. Fourth, Whitehead does not teach or suggest that the sensor elements are integrally formed in a common elastomeric body member and arranged in a row and column configuration.

Thus, a *prima facie* case of obviousness has not been established for claims 8 and 11. Therefore, the rejection of claims 8 and 11 under 35 U.S.C. § 103(a) as unpatentable over Whitehead is improper and should be withdrawn.

Claims 9, 10, 12 and 13 depend, directly or indirectly, from claims 8 and 11, and include additional recitations thereto. Accordingly, Applicants respectfully submit that the rejection of claims 9, 10, 12 and 13 under 35 U.S.C. § 103(a) is improper for at least the reasons stated above in connection with claims 8 and 11, and should be withdrawn.

As Applicants have traversed each and every claim rejection raised by the Examiner, it is hereby respectfully requested that the rejection of claims 1, 2 and 7-13 be withdrawn, and claims 1-18 be passed to issue.

Applicants believe no fees are due in connection with this Response. If any fees are deemed necessary, authorization is granted to charge any such fees to Deposit Account No. 13-0235.

Respectfully submitted,

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